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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,438

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Kenji Shiraishi

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01/07/2009

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ALEXANDRIA, VA 22314

EXAMINER

PETERSON, CHRISTOPHER K

ART UNIT

PAPER NUMBER

2622

NOTIFICATION DATE

DELIVERY MODE

01/07/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/764,438	<b>Applicant(s)</b> SHIRAISHI ET AL.	
	<b>Examiner</b> CHRISTOPHER K. PETERSON	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,8-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6,8-10 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Amendment After Non-Final Rejection filed on 10/17/2008 has been received and made of record. Examiner notes that the Applicant has amended claims 1, 5, and 9 and the objection to claims 2, 4, 6, 8, 10, and 12 is withdrawn. Claims 1, 2, 4 - 6, 8 - 10 and 12 are pending in this application.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 5, and 9 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 5, and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant cites "an exposure setup operation configured to set a number of electric shutter pulses to the beginning of the exposure

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setup operation". Applicant's specification does not teach an exposure setup operation configured to set a number of electric shutter pulses.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 2, 4 - 6, 8 - 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kokubo (US Patent 4,984,002) in view of Shepherd (US Patent Pub. # 2003/0133026).**

As to claim 1, Kokubo (Fig. 2 and 4) teaches an imaging apparatus comprising:

- a setup part (sync. generator 5) for an exposure period configured to generate a timing signal (vertical sync. signal VD, horizontal sync. signal HD) which prescribes an exposure period of an image pick up device (CCD 1) (Col. 3, line 15 – 30);
- a control part (timing pulse generator circuit 6) for the image pickup device (1) configured to control an operation of said image pick up device (1) in synchronization with said timing signal (VD signal) of the exposure period (Col. 3, line 15 – 30). The timing pulse generator circuit 6 generates a shutter pulse which is synchronized with the VD signal generated by the

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sync. generator (5). Kokubo shows this in Fig. 4B in the first VD pulse. A shutter pulse is synchronized with the VD pulse.

- a timing part (5) configured to measure an elapsed time from the timing signal of the exposure period (Col. 4, line 54 – Col. 5, line 9);
- an imaging apparatus control part (5) configured to control said control part (6) for the image pick up device (1) and said setup part (5) for the exposure period (Col. 4, line 54 – Col. 5, line 9),
- wherein said timing part (5) measures the elapsed time from the exposure period timing signal (VD signal) right before a beginning of an exposure setup operation (trigger signal) to the beginning of the exposure setup operation (trigger signal) by said setup part (5) for the exposure period (charge accumulating time), and when a time from the beginning of the exposure setup operation (trigger signal) to a generation of a next exposure period timing signal (VD signal), the time being calculated by using the measured elapsed time (the count on counter 15 when the trigger signal is applied to the (5), is equal to or greater than a predetermined time (delay trigger signal from 21), said imaging apparatus control part (5) shortens the time till the generation of the next exposure period timing signal (VD signal) from a regular exposure period (VD signal) (Col. 5, line 34 – 52). Kokubo teaches that a counter (15) is in the sync. generator (5). This counter (15) creates the VD signal. In the real shutter mode, counter (15) is counting when the trigger signal is applied to

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terminal (18) of the sync. generator (5). The sync. generator (5) creates a delayed trigger signal through the variable delay circuit (21), which resets the counter (15) and creates a VD signal earlier than the normal VD signal (Col. 5, lines 34 – 52). Examiner believes that when the trigger signal is created the counter (15) within the sync. generator (5) has a value, which is calculated by way of a counted value. The variable delay circuit (21) creates a predetermined delay which in turn resets counter (15) and creates the early VD signal.

Kokubo does not teach an exposure setup operation configured to set a number of electric shutter pulses to the beginning of the exposure setup operation. The Shepherd reference teaches image sensors having improved flushing of excess charge by reducing the power consumption and creating a uniform dark field while maintaining low dark current (Para 2). Shepherd (Fig. 3) teaches an exposure setup operation configured to set a number of electric shutter pulses (flush) to the beginning of the exposure setup operation (Para 17 – 19). Shepherd teaches during flushing, the vertical clocking includes clocking V1 high for a predetermined time, preferably the minimum time necessary for good vertical transfer efficiency, and V2 is clocked high on the falling edge of V1 for a predetermined time, also preferably the minimum time necessary for good vertical transfer efficiency. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a flush sequence as taught by Shepherd to the video camera system of Kokubo, to

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reduce power consumption while retaining minimum dark current and for having a substantially uniform dark field (Para 9 of Shepherd).

As to claim 2, Kokubo teaches the imaging apparatus according to claim 1, wherein said predetermined time (delay trigger signal from 21) is a time required for conducting the exposure setup operation (trigger signal) to said control part (6) for the image pick up device (1) (Col. 5, line 34 – 52).

As to claim 4, Kokubo teaches the imaging apparatus according to claim 1, wherein in order to shorten the time till the generation of the exposure period timing (VD signal), the exposure period timing signal (delay trigger signal from 21) is generated earlier than the regular exposure period (VD signal), right after the exposure setup operation (trigger signal) to said control part (6) for the image pick up device (1), and the exposure period (charge accumulating time) is thereby begun (Col. 5, line 34 – 52).

As to claims 5, 6, and 8, these claims differ from claim 1, 2, and 4 only in that claims 1, 2, and 4 are apparatus claims whereas claim 5, 6, and 8 are method. Thus method claims 5, 6, and 8 are analyzed as previously discussed with respect to claims 1, 2, and 4 above.

As to claims 9, 10, and 12, these claims differ from claim 1, 2, and 4 only in that claims 1, 2, and 4 are apparatus claims whereas claims 9, 10, and 12 cite a limitation of a control program on a computer readable memory which provides the imaging apparatus the ability to provide the function of the claims 1, 2, and 4. Kokubo teaches a solid state imaging apparatus, which requires a processor to perform the functions of the CCD. (Col. 3, lines 49 – 52).

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shepherd (US Patent # 7,274,391) reference is the US Patent for the publication used in the rejection above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER K. PETERSON whose telephone



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number is (571)270-1704. The examiner can normally be reached on Monday - Friday 6:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. K. P./  
Examiner, Art Unit 2622  
31 Dec 2008

/Tuan V Ho/  
Primary Examiner, Art Unit 2622